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Typed or Printed Name	Donna Macedo		
Signature	D. Macedo	Date	3/19/02

PRELIMINARY AMENDMENT UNDER C.F.R. 1.115		
Address to: Box Missing Parts Assistant Commissioner for Patents Washington, D.C. 20231	Attorney Docket Confirmation No.	UCAL-199 1289
	First Named Inventor	Mark Akeson
	Application Number	09/990,102
	Filing Date	November 21, 2001
	Group Art Unit	~~1645~~ 1654
	Examiner Name	Not assigned
	Title	*Methods and Devices for Characterizing Duplex Nucleic Acid Molecules*

4/a

Sir:

Prior to examination of the application on the merits, please enter the following amendments:

I. AMENDMENTS

IN THE SPECIFICATION

On page 41, please amend the paragraph starting on line 13 to read:

a'

We tested our explanation of the shoulder-spike signature using a series of blunt-ended DNA hairpins with stems that ranged in length from 3 to 9 base-pairs, corresponding to SEQ ID NOS:1-11 (Table 1). If the model described above is accurate, we would expect a substantial increase in blockade shoulder lifetime for each additional base pair and a modest linear increase in the lifetime of the downward spike at the end of the event. We would also expect the shoulder amplitude to decrease as the stem length increased. These predictions proved to be correct. Each base pair addition resulted in a measurable increase in median blockade shoulder lifetime that correlated with the calculated $\Delta G°$ of hairpin formation (Figure 2). Increasing stem length resulted in a 10 μs increase in median duration of the terminal spike. A downward trend in shoulder current amplitude was also observed from I/I_o equal to 68% for a 3 bp stem to I/I_o equal to 32% for a 9 bp stem (Table 1). Our results are consistent with greater obstruction of ionic current as the hairpin stem extends further into the vestibule with each additional base pair.